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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,322	10/23/2001	Philippe Gayet	97-CC-240 DIV	8585

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FLEIT, KAIN, GIBBONS,
GUTMAN & BONGINI, P.L.
ONE BOCA COMMERCE CENTER
551 NORTHWEST 77TH STREET, SUITE 111
BOCA RATON, FL 33487

EXAMINER

CAO, PHAT X

ART UNIT PAPER NUMBER

2814

DATE MAILED: 10/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/046,322

Applicant(s)

GAYET ET AL.

Examiner

Phat X. Cao

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16, 17 and 23-25 is/are allowed.
- 6) ☒ Claim(s) 15, 18 and 22 is/are rejected.
- 7) ☒ Claim(s) 19-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/320,201.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Greco et al (US. 5,371,047).

Greco (Fig. 4) discloses an integrated circuit of the type having metallization levels separated by dielectric layers and metallized vias connecting lines of different metallization levels, the integrated circuit comprising: at least first and second metallization levels 310 and 330; at least first and second superposed dielectric layers 126 and 210 located above the first metallization level 310, the first dielectric layer 126 being located on the first metallization layer 310; a third dielectric layer 220 located above the first and second dielectric layers; and at least one electrical connection element 212 provided in the third dielectric layer 220 and passing through the second dielectric layer 210 until it comes into contact with the first dielectric layer 126.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national

application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claim 15 is rejected under 35 U.S.C. 102(e) as being anticipated by Koyama (US. 5,981,377).

Koyama (Fig. 5F) discloses an integrated circuit of the type having metallization levels separated by dielectric layers and metallized vias connecting lines of different metallization levels, the integrated circuit comprising: at least first and second metallization levels; at least first and second superposed dielectric layers 52b and 52c located above the first metallization level, the first dielectric layer 52b located on the first metallization level 51; a third dielectric layer 52d located above the first and second dielectric layers; and at least one electrical connection element 58 provided in the third dielectric layer 52d and passing through the second dielectric layer 52c until it comes into contact with the first dielectric layer 52b.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greco et al (US. 5,371,047) or Koyama (US. 5,981,377).

Neither Greco nor Koyama discloses a third metallization level having fourth, fifth and sixth dielectric layers and an addition electrical connection element structures as claimed.

However, it would have been obvious to include in the device structure of Greco or Koyama a third metallization level having the same structures as first and second metallization levels in order to provide the multilevel metal interconnections.

Allowable Subject Matter

7. Claims 16-17 and 23-25 are allowed.

8. Claims 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to disclose the combination of a multilevel interconnection structure as claimed, including a metallized via having an upper surface being flush with an upper surface of the second dielectric layer.

Response to Arguments

9. Applicant argues that Greco's Fig. 4 does not suggest the invention as claimed because the electrical connection element 212 does not pass through the second dielectric layer 126.

This argument is not persuasive because the dielectric layer 126 is not relied on

for teaching the second dielectric layer as asserted by Applicant, but rather, the dielectric layer 126 is relied on for teaching the first dielectric layer, the dielectric layer 210 is relied on for teaching the second dielectric layer, and the dielectric layer 220 is relied on for teaching the third dielectric layer. Therefore, Greco's Fig. 4 clearly discloses the invention as claimed (see ground of rejection for details).

Similarly, in Koyama's Fig. 5F, the dielectric layer 52a is not relied on for teaching the second dielectric layer as asserted by Applicant, but rather, the dielectric layer 52b is relied on for teaching the first dielectric layer, the dielectric layer 52c is relied on for teaching the second dielectric layer, and the third dielectric layer 52d is relied on for teaching the third dielectric layer. Therefore, Koyama's Fig. 5F clearly discloses the invention as claimed (see ground of rejection for details).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

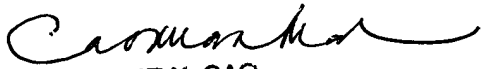
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phat X. Cao whose telephone number is (703) 308-4917. The examiner can normally be reached on Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

PC
September 30, 2003


PHAT X. CAO
PRIMARY EXAMINER